

Appl. No. 09/960,029
Amdt. Dated 11/14/2005
Reply to Office Action of August 12, 2005

REMARKS/ARGUMENTS

In response to the outstanding office action, the claims in the application have been carefully amended to make clear that the invention comprises methods and apparatus for i) the receipt of a digitized analog voice signal sampled at a first rate, the conversion of the digitized analog voice signal to a continuous-time analog signal, the sampling of the continuous-time analog signal at a second rate different from the first rate, and storing the samples of the analog signal, ii) the reading of samples of an analog signal taken at a first rate from a memory array, the conversion of the samples to a continuous-time analog signal and the conversion of the continuous-time analog signal to a digitized analog voice signal at a second rate different from the first rate, or both.

Referring to Wong, the primary reference cited by the Examiner, and claim 10, the Examiner states that Wong discloses a method of recording a digital signal comprising converting said digital signal into a continuous-time analog signal, in that Figure 3A shows a digital to analog converter 310 connected to the digital input/output buffers. This, however, is incorrect, in that a digital to analog converter converts individual digital signals to individual analog values so that the output of the digital to analog converter is not a continuous-time analog signal, but rather is a stream of individual analog values. The Examiner further states that Wong shows the sampling of the continuous-time analog signal to form a plurality of discrete analog samples, in that Figure 3A shows a digital to analog converter 310 connected to the sample and hold circuit 110 via mux 330. This, too, is incorrect, in that the mux is simply transferring the individual discrete analog values from the digital to analog converter to the sample and hold circuit, until the analog write circuit can write the values held in the sample and hold circuit into the memory array. Consequently, Figure 3A of Wong simply shows the conversion of individual digital values to individual analog values and the storage of those analog values in the memory array. In that regard, claim 10 has been specifically amended to claim a method of recording a digitized analog voice signal sample at a first rate by converting the digitized analog voice signal into a continuous-time analog signal (not found in Wong), and then sampling the continuous-time analog signal at a second rate different from the first rate to form a plurality of discrete analog samples and storing the plurality of discrete analog samples into respective cells of a memory array. Wong, on the other hand, merely stores the analog values of a digitized analog voice signal. The advantage of the present invention over Wong, or other prior art, is that the present invention may receive digitized analog voice signals taken at one rate and store discrete analog samples at another rate, yet relatively accurately recreate the digitized analog voice signal at its original rate even though the output of the array is read to recover discrete samples taken at the storage rate. There is nothing in Wong to suggest such a method, or apparatus for practicing such a method.

Referring to Wong and claim 14, the Examiner rejected claim 14 on Wong, saying that in Figure 3A, Wong shows the generating of a continuous-time analog from the plurality of discrete analog samples and converts the continuous-time analog signal into a digital signal. This is incorrect. Wong reads discrete analog samples, and either directs the discrete samples to an A to D converter for output in digital form, or directs the discrete samples to a MUX that outputs the discrete samples one at a time to an analog output buffer 165 that converts them to a continuous-

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time analog signal. Nowhere in Wong are the samples converted to a continuous-time analog signal and then reconverted to digitized samples again. In that regard, claim 14 has been amended to make clear that the samples converted to a continuous-time analog signal are samples taken at a first sample rate, and that the continuous-time analog signal is converted into the digitized analog voice signal by sampling the continuous-time analog signal at a second rate different from the first rate.

All independent claims in the application have been amended to make clear that on storage, a digitized analog voice signal sampled at a first rate is converted to a continuous-time analog signal, which in turn is sampled at a second rate to provide discrete analog samples that are then stored, or on read back, retrieving discrete analog samples taken at a first rate, filtering the discrete analog samples to generate a continuous-time analog signal, then sampling the continuous-time analog signal at a second rate to generate the digitized analog voice signal. In essence, the present invention allows the storage and playback of digitized analog voice signals even though the storage is not synchronous with the digitized analog voice signals stored and played back.

Since, in essence, some form of the foregoing limitations are in all independent claims, it is believed that Wong simply is of background interest with respect to the present invention. Further, while Prater and Rosa were also cited with respect to various claims, these patents are relevant, if at all, on individual details and do not, either alone or in combination with Wong, disclose or render the present invention obvious.

Information Disclosure Statement

Applicant submitted an Information Disclosure Statement on December 17, 2001. Inasmuch as the outstanding Office Action does not contain an acknowledged copy of the Information Disclosure Statement, Applicant respectfully requests consideration of the same and encloses a courtesy copy of the communication for the Examiner's convenience.

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CONCLUSION

Applicant respectfully requests that a timely Notice of Allowance be issued in this case.

Respectfully submitted,

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Dated: 11/14/2005

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Jessica A. Clark

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